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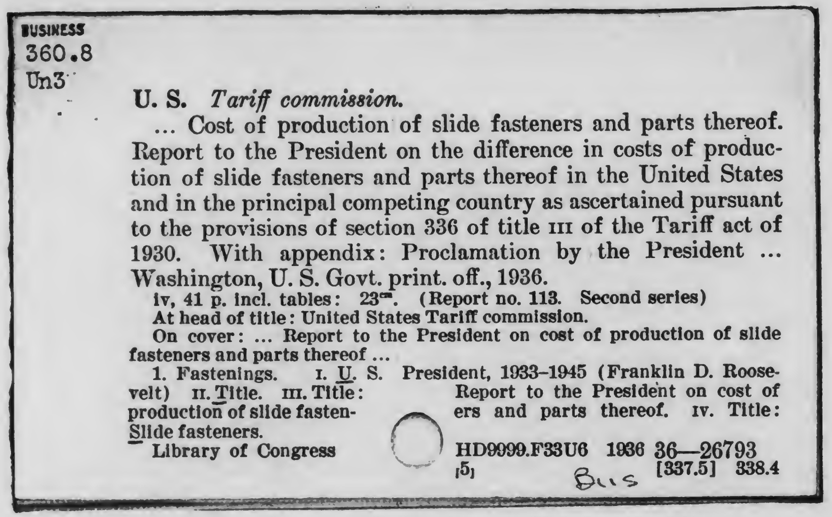

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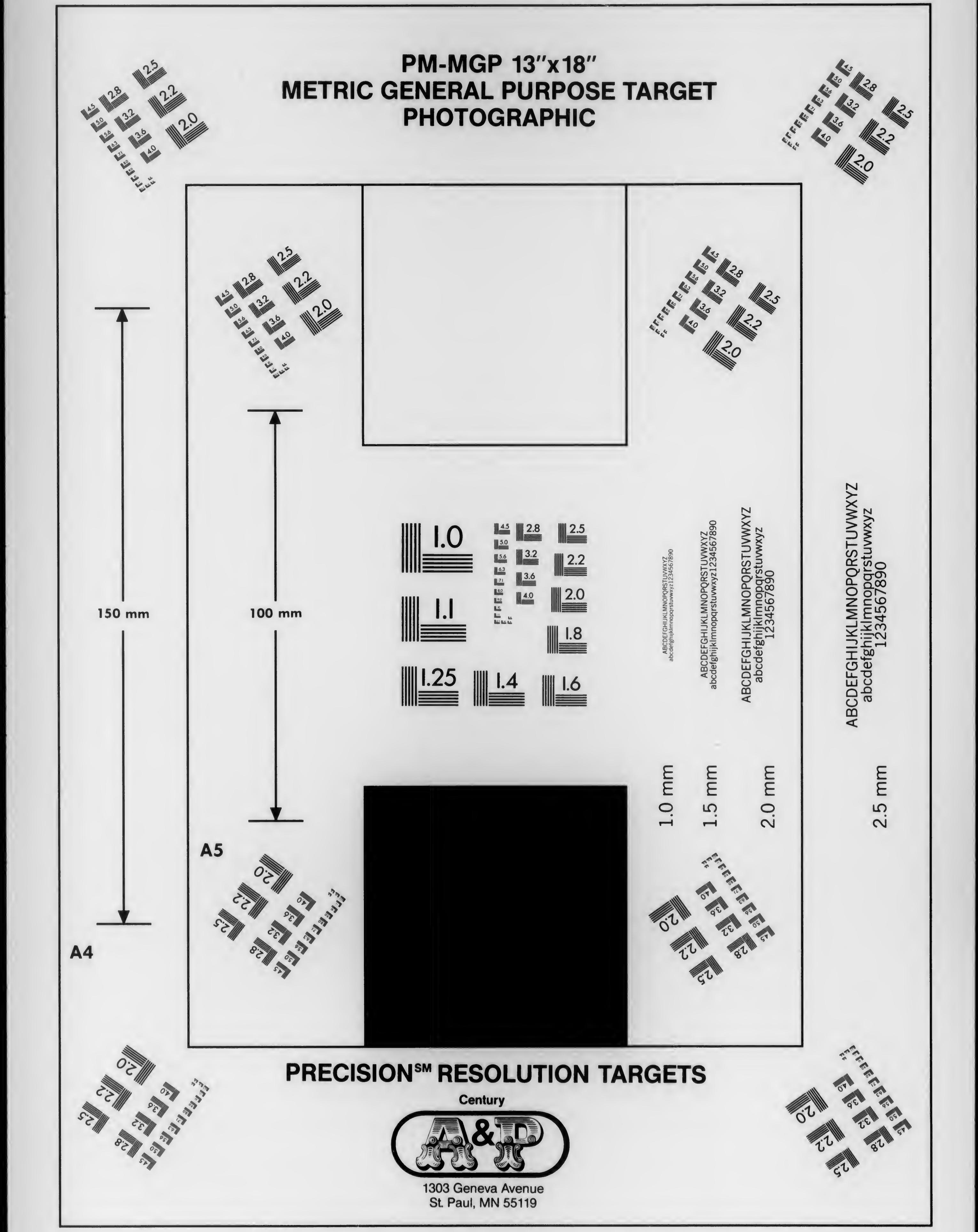

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ON
COST OF PRODUCTION OF SLIDE FASTENERS AND PARTS THEREOF

WITH APPENDIX
PROCLAMATION BY THE PRESIDENT

REPORT No. 113
SECOND SERIES

UNITED STATES TARIFF COMMISSION

COST OF PRODUCTION OF SLIDE FASTENERS AND PARTS THEREOF

REPORT TO THE PRESIDENT

ON

THE DIFFERENCES IN COSTS OF PRODUCTION OF SLIDE FASTENERS AND PARTS THEREOF IN THE UNITED STATES AND IN THE PRINCIPAL COMPETING COUNTRY AS ASCERTAINED PURSUANT TO THE PROVISIONS OF SECTION 336 OF TITLE III OF THE TARIFF ACT OF 1930

WITH APPENDIX
PROCLAMATION BY THE PRESIDENT

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LETTER OF TRANSMITTAL

United States Tariff Commission,
Washington, June 5, 1936.

My Dear Mr. President: I have the honor to transmit herewith the report of an investigation made by the United States Tariff Commission of differences in costs of production in the United States and in the principal competing country, for the purposes of section 336 of title III of the Tariff Act of 1930, of slide fasteners and parts.

This report is accompanied by a summary of information obtained by the Commission in the investigation.

The draft of the proclamation, in quadruplicate, is being submitted through the Director of the Bureau of the Budget, the Attorney General, and the Director of the Division of the Federal Register, the National Archives, in compliance with Executive Order No. 7298 of February 18, 1936.

Respectfully,

Robert L. O'Brien, *Chairman.*

The President,
The White House.

COST OF PRODUCTION OF SLIDE FASTENERS AND PARTS THEREOF

United States Tariff Commission,
Washington, June 3, 1936.

To the President: The Tariff Commission herein reports the results of an investigation of the differences in cost of production of slide fasteners and parts thereof, in chief value of base metal, in the United States and in the principal competing country, for the purposes of section 336 of title III, part II, of the Tariff Act of 1930, and its findings with respect thereto.

Upon consideration of the facts obtained in this investigation, the Commission finds that the equalization of the differences in costs of production of slide fasteners and parts thereof, in chief value of base metal, in the United States and in the principal competing country, would require an increase of the present rate of duty of 45 percent ad valorem to 66 percent ad valorem.

The Commission instituted this investigation on December 20, 1935, in response to an application filed by domestic manufacturers of slide fasteners under section 336 of the Tariff Act of 1930 on October 30, 1935. On ordering the investigation the Commission gave notice of a public hearing to be held on January 28, 1936. At this hearing, held on January 28 and 29, 1936, in Washington, D. C., parties interested were given reasonable opportunity to be present, to produce evidence, and to be heard as required by law.

FINDINGS OF THE COMMISSION

1. Neither the Tariff Act of 1922 nor the Tariff Act of 1930 contains an *eo nomine* provision for slide fasteners and parts, and under both acts such articles have been dutiable as manufactures of base metal, not specially provided for. Under the act of 1922 (paragraph 399) the rate was 40 percent ad valorem, and under the act of 1930 (paragraph 397) the rate has been 45 percent ad valorem.

2. The total output of the domestic industry was 13,100,000 fasteners in 1928, 35,500,000 in 1933, 67,100,000 in 1934, and 109,350,000 in 1935. The increase in production in 1935 was greater than the increase in sales, as domestic producers introduced the practice of building up stocks in order to be able to fill orders more promptly. Until 1926 there was only one company producing slide fasteners in the United States, and this company still produces much the larger part of the total domestic output. By its ownership of certain patent rights, and for other reasons, it has so far been able to influence the policies of other producers, particularly their marketing policies. In 1935 two other concerns produced a considerable quantity, and, in addition, there were certain still smaller producers.

The prices of the leading domestic producer in 1935, as well as in preceding years, exceeded by a wide margin its total costs, which include large experimental, selling, and advertising expenses, and its rate of profit on investment has for many years been high.

3. Imports of slide fasteners became important for the first time in about 1931 and resulted in an investigation by the Commission, under section 337 of the Tariff Act of 1930, of unfair methods of competition. As a result of orders of exclusion issued under that section, the first of which was made in August 1932, imports were negligible until late in 1934 when the so-called "pioneer" patents and the sections of the exclusion order predicated thereon expired. Imports entered in large volume for the first time in 1935, amounting in that year to 12,992,573 slide fasteners, valued at $462,829. Imports during the second half of 1935 numbered 9,675,069 fasteners; during the first 4 months of 1936 they numbered 9,775,029 fasteners.

The imports comprise fewer of the more elaborate kinds of fasteners, and fewer of the longer fasteners than the domestic production so that a comparison of the total numbers overstates the relative importance of the imports as compared with the total domestic production.

4. Japan is the principal competing country, having supplied 55 percent of the total quantity and 39 percent of the value of the imports in 1935. In the last 6 months of 1935, during which period 74 percent of all imports for that year were entered, Japan supplied 68 percent of the quantity and 53 percent of the value of the total imports.

5. Although the pioneer patents on slide fasteners formerly held by the leading domestic manufacturer have expired, there are still patents covering certain features, and by reason of the exclusion order above mentioned there were no imports in 1935 of certain types of slide fasteners and parts, which types together constituted over three-fourths of the domestic production in that year. Chief among the types of slide fasteners not imported were those with wing or pin lock, cam lock and coined sliders. Imports also have not covered as wide a range of varieties, sizes, and lengths as domestic production. In particular there have been no imports from Japan of large-sized fasteners, and the imports of small and medium-sized fasteners have been confined substantially to lengths of 12 inches or less.

6. Although the slide fasteners imported from Japan have not been as carefully inspected as those made in the United States and, therefore, have been less dependable as regards uniformity in quality, the Commission finds that for purposes of section 336 of the Tariff Act of 1930 the Japanese fasteners are like or similar to fasteners made in the United States.

7. The Commission selected for use as the basis of cost comparisons slide fasteners 4, 6, and 8 inches in length in the small size and 6, 8, and 12 inches in length in the medium size. Manufacture of these slide fasteners involves all the basic materials and processes necessary to the manufacture of all types, sizes, and lengths of slide fasteners and parts thereof. The Commission finds that the differences between domestic and Japanese production costs of the types, lengths, and sizes of slide fasteners for which cost comparisons were made are representative of the cost differences for all types, sizes, and lengths of slide fasteners and parts thereof.

8. New York is the principal market in the United States for both domestic and imported slide fasteners, wholly or in chief value of base metal.

9. The second 6 months of 1935 is a representative period for the purposes of section 336.

10. The costs of production as defined in section 336 (h) (4) were not readily ascertainable for slide fasteners and parts produced in the principal competing country, and the Commission, in accordance with section 336 (e) (2) (A), accepted the weighted average invoice prices of such slide fasteners imported from Japan as evidence of costs of production. The invoice prices in yen of slide fasteners packed for shipment were converted to United States dollars at the current rate of exchange at the time of shipment.

11. Domestic costs of production and foreign costs of production ascertained in accordance with section 336:

(*a*) The Commission has found the costs of production, including transportation and other delivery charges, to the principal market in the United States, of slide fasteners and parts thereof, wholly or in chief value of base metal, in the United States, and the corresponding costs of such articles produced in the principal competing country as evidenced by weighted average invoice prices, plus transportation and other delivery charges from the centers of production in the principal competing country to the principal market in the United States, but such costs cannot be disclosed without revealing the operations of individual concerns.

(*b*) The differences between domestic and foreign costs were separately ascertained for six representative sizes and lengths of fasteners, and for each the cost difference was related to the dutiable value of the imported fasteners, showing the ad valorem rate of duty necessary to equalize the costs. The average of these six ad valorem rates, weighted according to the relative importance of the several sizes and lengths in total consumption of the United States (i. e., domestic production plus imports), was 66 percent.

(*c*) The domestic producers possess advantages in competition with the Japanese producers because they are able to supply a wider variety of fasteners, because they are able to fill orders and reorders more promptly, and because the domestic product has a reputation for uniformly reliable quality, whereas many domestic manufacturers who use slide fasteners in their products have found that the Japanese fasteners have not been inspected with sufficient care to insure such uniformity. These advantages are not susceptible of precise valuation on a statistical basis. It is possible that the effect of these advantages on the cost comparison would be offset if a deduction were made from the invoice prices of the imported product, used as evidence of foreign costs, for the probable profits of Japanese manufacturers. Consequently no adjustment of the costs has been made by reason of the advantages in competition mentioned. No other relevant factors constituting advantages or disadvantages in competition were disclosed in the course of this investigation.

CONCLUSION

The Commission finds it shown by the investigation (a) that the duty of 45 per centum ad valorem expressly fixed by statute on slide fasteners and parts thereof, wholly or in chief value of copper, brass, nickel, zinc, or other base metal, but not plated with platinum, gold, or silver, or colored with gold lacquer, and not specially provided for, does not equalize the difference in costs of production, including transportation and other delivery charges to the principal market in the United States, of the domestic articles and the like or similar foreign articles when produced in the principal competing country; and (b) that the rate of duty shown by the investigation to be necessary to equalize such difference in costs of production is 66 percent ad valorem.

Appended to this statement of findings is a summary of information obtained in this investigation.

Respectfully submitted.

Robert L. O'Brien,
Chairman.
Thomas Walker Page,
Vice Chairman.
Edgar B. Brossard,
Oscar B. Ryder,
Raymond B. Stevens,
E. Dana Durand,
Commissioners.

SUMMARY OF INFORMATION OBTAINED IN THE INVESTIGATION

Slide fasteners and parts thereof, not being specifically mentioned in the Tariff Acts of 1922 and 1930, are classified for duty purposes according to the material of chief value, which is usually base metal. As manufactures of base metal, n. s. p. f., they were dutiable under paragraph 399 of the Tariff Act of 1922 at 40 percent ad valorem and are dutiable under paragraph 397 of the act of 1930 at 45 percent. Slide fasteners in chief value of materials other than base metal are not within the scope of this investigation.

Pursuant to a petition by a domestic manufacturer of slide fasteners, alleging principally the violation of patent rights by importers, the Tariff Commission, on August 9, 1932, instituted an investigation under section 337 of the Tariff Act of 1930 which resulted in the exclusion of most of these products from entry. Some of the patents covered by this exclusion order expired in 1934, making possible the present imports. A more detailed statement concerning the exclusion order is made in appendix I of this report.

In addition to the duty assessed under paragraph 397, slide fasteners are subject to a tax on their copper content,[1] and also, until invalidated as a result of a decision of the United States Supreme Court on January 6, 1936, were subject to a tax on their cotton content.[2] The tax on the cotton content of imported fasteners was to compensate for the processing tax paid on domestic manufacturing of cotton.

HISTORY AND SCOPE OF THE INVESTIGATION

The present investigation was ordered in response to an application submitted by domestic manufacturers of slide fasteners requesting an increase in the existing rate of duty, under section 336 of the Tariff Act of 1930, and applies to slide fasteners and parts thereof in chief value of base metal. The application was received October 30, 1935, the investigation was ordered by the Commission December 20, 1935, and a public hearing was held in Washington, D. C., on January 28 and 29, 1936.

Although only slide fasteners and parts thereof in chief value of metal are dutiable under paragraph 397 and come within the scope of this investigation, information was obtained regarding all kinds of slide fasteners. No importations were disclosed of either fasteners having metallic interlocking elements covered by the tape upon which they are mounted or of fasteners in which the interlocking elements are the turns of a coiled wire spring attached lengthwise to the edges of the tape. Throughout this report, the unqualified term "slide fastener" will refer only to those fasteners having individual interlocking elements made of base metal and with such elements exposed.

---

[1] As provided for in sec. 601 (c) 7 of the Revenue Act of 1932, effective June 21, 1932. While this act enumerates several rates, on all invoices examined importers of slide fasteners were assessed a tax of 3 cents per pound. Unless extended by further legislation this provision will expire June 30, 1937.

[2] Approximately 5 cents per pound, in accordance with the provisions of sec. 15 (e), amended, of the Agricultural Adjustment Act, approved May 12, 1933.

DESCRIPTIONS AND USES

Slide fasteners are made of two adjacent strips of fabric tape, each having a corded edge along which are closely spaced interlocking elements joined together (nested) to form a continuous seam or separated by means of a slider. They consist of a number of component parts each with distinct characteristics and functions, and serve the purpose of the older closures such as buttons, hooks and eyes, laces, and snap fasteners.

A detailed description of their parts and functions will be found in appendix II of this report. However, some of the more important features warrant special attention at this point.

Slide fasteners are made in two major types, of several metals, in three principal sizes, each size in many lengths, and mounted upon several weights and widths of tape in many colors.

There are two general kinds of fasteners, differing essentially only in the method of joining the two strips of tape at the lower ends. In the nonseparable (closed bottom) fastener these ends are permanently joined together, while in the other kind, the separable (open bottom) fastener, the two tapes may be separated throughout their entire length.

The metallic parts of a fastener are made principally of nickel silver, brass, aluminum or zinc alloys. They are usually finished in gilt or nickel; some are enameled in various colors or oxidized.

A fastener may be equipped with either a locking or a nonlocking slider. The locking type prevents self opening and permits the regulation of the length of the opening.

METHODS OF MANUFACTURE

Slide fasteners are made by two general methods of manufacture, which differ essentially in that the metallic components are either formed from wire (or strip) or are die cast. The latter method in 1935 accounted for only a very small portion of domestic output, being more or less in an experimental stage.

The methods used by the different companies in producing slide fasteners from wire, while varying somewhat in the several stages of manufacture, are generally similar. The component parts of the fasteners are made in distinct operations. A detailed description of the methods of manufacture may be found in appendix III of this report.

New Developments.

Aside from the many refinements and changes currently being made in the methods of producing slide fasteners from wire, two recent developments are of outstanding interest.

The first is a plastic fastener in which pyroxylin is substituted for metal. The principal advantages of this fastener are its light weight and its appearance, the elements being produced in numerous colors. While its function and operation are identical with those of the metal fastener, the difference in raw material necessitates manufacturing equipment different in many respects from that used in the production of metal fasteners. The plastic fastener lacks the strength of the metal fastener, and in addition is less resistant to heat.

The other development is a fastener in which the metal components are die cast. Certain parts of fasteners have been die cast for some time, but only recently has production of a fastener entirely by this method been attempted on a commercial scale. Destruction tests performed on the die-cast fastener and on those made from wire indicate that the strength of the two types is about equal. The advantages of this newer process are greater economies of metal, fewer stages in the manufacture of the slider, and considerable savings in labor.

THE DOMESTIC INDUSTRY

History of the Industry.

Slide fasteners are reported to have originated in the United States, the first patent being granted in 1893 to W. L. Judson, of Chicago. Many unsuccessful attempts were made to perfect and to manufacture these original slide fasteners, which differed greatly in design from the present type. The Universal Fastener Co., organized in 1905, and its successor, the Automatic Hook & Eye Co., organized in 1908, both failed to produce a marketable fastener. In 1913 the Hookless Fastener Co., of Meadville, Pa., was organized, originating the manufacture of the present type of slide fastener.

In 1926 the G. E. Prentice Co., of New Britain, Conn., an established maker of personal and other light hardware lines, started to make slide fasteners. About the same time the Shoe Hardware Division of the United States Rubber Co., located in Waterbury, Conn., which had long manufactured aluminum lasts for rubber footwear, also began to manufacture slide fasteners.

In 1929 the Lion Fastener Co., of Meadville, Pa., was organized solely for the manufacture of slide fasteners. About 1930 the Sterling Novelty Co. was incorporated to make slide fasteners and small wares equipped with slide fasteners. This company is a subsidiary of the American Fastener Co., manufacturers of snap fasteners and other light metal lines.

In 1935 three new companies started the commercial production of slide fasteners. These organizations are the Crown Fastener Corporation of New York City, engaged solely in making slide fasteners; the Conmar Products Corporation, of Bayonne, N. J., a subsidiary of Margon Co., manufacturers of voices and moving eyes for dolls; and the Seltzer Fastener Co., of Philadelphia, Pa., a manufacturer of light metal wares.

Slide fasteners are the only product made by three of the companies and represent the bulk of the output of two other concerns. To the three remaining companies slide fasteners are only a small part of their total annual business.

Patents have played an important part in the recent history of the industry. Although there is some licensing of patents between manufacturers, each producer, for the most part, uses equipment which he has developed and fully covered by patents. There has been considerable litigation by domestic manufacturers for the purpose of clarifying claims regarding products and processes of manufacture.

Equipment.

The machinery used in the industry is generally designed by the individual companies making fasteners. Some types of equipment, however, mostly small presses, are purchased, but even these must be equipped by the slide fastener manufacturers with specially designed dies that often represent the greater portion of the total cost.

In general, the machinery is intricate and is operated at high speed, with resultant severe strain and comparatively short life. Although the usual practice is to write off much of it in expectation of a 10-year life, improvements are made so rapidly that machines frequently become obsolete while still in good mechanical condition. It is sometimes possible to rebuild such equipment, but often its only value is as scrap.

Changes in productive equipment are generally toward increased output per worker, through a greater use of automatic machinery and higher speeds in operation. This consideration is important to domestic producers to whom labor is a major item of cost.

In designing and maintaining machinery, the various manufacturers of fasteners operate complete tool rooms or machine shops of considerable size.

Capacity.—In view of the improvements in equipment constantly being made by the more established manufacturers and the expansions of the newer concerns that have more recently entered the field, the productive capacity of the industry as a whole is rapidly expanding. The peak monthly production in 1935 of each of the older manufacturers was at such a rate as to closely approximate capacity. If to these rates of output be added the latest operating rates of the three newer manufacturers, the domestic industry, operating on a three-shift basis, has a total productive capacity of 150,000,000 to 175,000,000 fasteners annually.

Production.

Production of slide fasteners in the United States has steadily increased since 1928, the earliest year for which statistics are available.

The following table shows total annual production for the 1928–35 period.

TABLE 1.—*Slide fasteners: Domestic production, 1928–35*

Year:	*Number of fasteners*
1928	13, 100, 000
1929	23, 500, 000
1930	29, 200, 000
1931	30, 900, 000
1932	26, 200, 000
1933	35, 500, 000
1934	67, 100, 000
1935	109, 350, 000

Although no statistics are available for domestic production in 1936, total domestic sales in the first quarter of 1936 appear to be at least as high as in the corresponding period of 1935.

Production of four manufacturers in the last 6 months of 1935 according to principal classes of fasteners was as follows:

Size	Nonlock	Lock		Total	Proportion by sizes, percent
		Nonseparable	Separable		
Small:					
Number	8, 064, 000	11, 344, 000	1, 999, 000	21, 407, 000	----------
Percent	37. 7	53. 0	9. 3	100	43. 0
Medium:					
Number	3, 924, 000	10, 683, 000	11, 557, 000	26, 164, 000	----------
Percent	15. 0	40. 8	44. 2	100	52. 6
Large:					
Number	423, 000	1, 579, 000	210, 000	2, 212, 000	----------
Percent	19. 1	71. 4	9. 5	100	4. 4
Total:					
Number	12, 411, 000	23, 606, 000	13, 766, 000	49, 783, 000	----------
Percent	24. 9	47. 4	27. 7	100	100. 0

Employment and Wages.

During most of 1935, the industry employed about 4,900 persons weekly. Workers are either semiskilled, such as machine operators, inspectors, or assemblers, or skilled, such as machinists and tool makers; chain machine operators form an intermediate group. All of the skilled workers are men. In the semiskilled operations male and female workers are employed, but female operators outnumber the male.

Weekly wage scales in the industry in 1935 averaged as follows: Machinists and tool makers about $40; chain machine operators somewhat less; and semiskilled operators, about $20. Female operators are sometimes paid at slightly lower rates than male operators.

Skilled operations require the apprenticeship common to the machinists and tool- and die-making crafts. From 4 to 12 weeks are required to train a semiskilled operator. Because of the elaborate detail of instructions and orders, operators must have a rather high order of intelligence.

During a large part of 1935 most of the domestic plants operated on an 8-hour day, 5-day week on a two- or three-shift basis. While the field investigation was under way most of the industry was on a two-shift basis.

EXPORTS

The entire output of the domestic slide fastener industry is now consumed in the American market. There have been practically no exports.

The sale of foreign patent rights, which subsequently became involved in market agreements of the leading European manufacturers, precludes the possibility of export by certain of the domestic companies. Some domestic manufacturers have no such restrictions, but these have not developed an export trade.

IMPORTS AND CHIEF COMPETING COUNTRY

Slide fasteners were not reported separately in import statistics until January 1935. However, there were imports in noticeable volume in 1931. These gave rise to a petition by the principal domestic producer for action by the Commission under section 337 on the grounds of patent infringement. From the time exclusion orders were issued (August 1932 and March 1933) until late in 1934, when some of the patents included in the exclusion orders had expired, imports consisted primarily of small shipments made for the purpose of determining their legal admissibility into the United States. Shortly after the expiration of the "pioneer" patents late in 1934, imports began to reach the United States in commercial quantities.

Japan is the chief competing country. In the following table, monthly totals of imports into New York in 1935 and into the entire United States during the first 4 months of 1936 are shown by principal sources. Practically all entries of slide fasteners into the United States entered through the port of New York.

There were imports from Czechoslovakia throughout the year, and those from Japan first appeared in April; for the year 1935 as a whole, 55 percent of the total quantity imported came from Japan while those from Czechoslovakia accounted for only 40 percent. The last 6 months of 1935, when 74 percent of all imports during the year were entered, Japan supplied 68 percent as compared with 28 percent from Czechoslovakia, imports by months indicating a decided upward trend in the shipments from Japan and a corresponding downward trend from Czechoslovakia.

In terms of value and considering the year as a whole, imports from Czechoslovakia exceeded those from Japan; the reverse was true of imports entered during the last half of the year. As a measure of competitiveness, value figures are less significant, because of the different price bases applicable to slide fasteners imported from Europe and from the Orient.

Imports from Japan in the last 6 months of 1935 are shown in table 3 by size, length, and type of pull. This tabulation discloses the importance of the shorter lengths among Japanese imports, the 6- and 7-inch fasteners combined accounting for about 68 percent of the total.

Small and medium fasteners constitute the entire size range of imports from Japan, and very few chain pulls are imported from that source.

TABLE 2.—*Slide fasteners and parts thereof: Imports for consumption from principal sources during 1935 and the first 4 months of 1936*

Month	Japan		Czechoslovakia		All other countries		Total	
	Number	Value	Number	Value	Number	Value	Number	Value
1935:								
January	------	------	19,440	$1,019	------	------	19,440	$1,019
February	------	------	282,960	14,693	10,000	$463	292,960	15,156
March	------	------	357,257	17,734	46,000	2,293	403,257	20,027
April	82,536	$1,921	594,381	30,821	25,000	1,271	701,917	34,013
May	337,992	9,720	697,396	35,596	71,900	3,417	1,107,288	48,733
June	232,428	6,491	497,194	25,382	63,020	3,018	792,642	34,891
July	371,532	9,907	741,368	36,024	43,652	1,808	1,156,552	47,739
August	830,032	21,180	511,448	25,102	48,464	2,069	1,389,944	48,351
September	778,308	19,027	454,616	19,595	94,027	3,557	1,326,951	42,179
October	1,395,514	34,208	386,846	17,266	81,557	4,125	1,863,917	55,599
November	1,735,763	40,105	369,397	17,185	58,360	3,060	2,163,520	60,350
December	1,426,946	39,407	241,328	10,699	105,911	4,666	1,774,185	54,772
Total	7,191,051	181,966	5,153,631	251,116	647,891	29,747	12,992,573	462,829
Total first 6 months	652,956	18,132	2,448,628	125,245	215,920	10,462	3,317,504	153,839
Total second 6 months	6,538,095	163,834	2,705,003	125,871	431,971	19,285	9,675,069	308,990
1936:								
January	1,617,723	39,851	198,886	8,333	38,306	1,987	1,854,915	50,171
February	1,849,619	44,145	428,930	18,789	156,802	7,722	2,435,351	70,656
March	2,089,336	46,768	64,937	2,028	262,929	11,629	2,417,202	60,425
April	2,636,667	60,078	309,688	13,321	121,206	6,046	3,067,561	79,445
Total 4 months	8,193,345	190,842	1,002,441	42,471	579,243	27,384	9,775,029	260,697

Source: Data for 1935 obtained from analysis of invoices by U. S. Tariff Commission and cover only entries at port of New York. Approximately 50,000 fasteners were entered at other ports. Statistics for 1936 are preliminary data for entries at all ports from unpublished data of the Department of Commerce. Value figures for both periods include negligible imports of parts.

TABLE 3.—*Slide fasteners: Imports from Japan during last 6 months of 1935 by size, length,*[1] *and type of pull*

[Number of fasteners]

Length (inches) [2]	Small			Medium			Total		
	Tab	Chain	Total	Tab	Chain	Total	Tab	Chain	Total
3	43,300	------	43,300	------	------	------	43,300	------	43,300
4	295,600	3,100	298,700	286,400	------	286,400	582,000	3,100	585,100
5	295,800	12,300	308,100	90,700	------	90,700	386,500	12,300	398,800
6	1,376,800	49,800	1,426,600	673,000	17,100	690,100	2,049,800	66,900	2,116,700
7	1,633,600	71,300	1,704,900	604,000	12,300	616,300	2,237,600	83,600	2,321,200
8	734,300	36,900	771,200	158,400	5,000	163,400	892,700	41,900	934,600
9	56,900	8,800	65,700	36,200	1,800	38,000	93,100	10,600	103,700
10	1,400	5,000	6,400	7,300	------	7,300	8,700	5,000	13,700
11	------	------	------	(3)	------	(3)	(3)	------	(3)
12	------	------	------	13,200	------	13,200	13,200	------	13,200
13	------	------	------	1,200	------	1,200	1,200	------	1,200
14	------	------	------	2,200	------	2,200	2,200	------	2,200
15	------	------	------	2,200	------	2,200	2,200	------	2,200
18	------	------	------	2,200	------	2,200	2,200	------	2,200
21	(3)	------	(3)	------	------	------	(3)	------	(3)
	4,437,700	187,200	4,624,900	1,877,000	36,200	1,913,200	6,314,700	223,400	6,538,100

[1] Imports not distributed on invoices according to length are included and distributed on basis of those for which lengths were known.

[2] Including additional fractional parts of an inch.

[3] Imports of less than 100 fasteners.

Source: Compiled by the United States Tariff Commission from invoice data.

THE FOREIGN INDUSTRY

Slide fasteners are manufactured in many parts of the world. Although no statistical data for world production are available, information obtained in the investigation, together with statistics of imports entered in the United States, indicate that the principal foreign producing countries are Japan, Czechoslovakia, Germany, and the United Kingdom. Slide fasteners are also made in Switzerland, Italy, Belgium, Spain, Austria, France, Canada, and Mexico.

Except in Japan, where considerable hand labor is employed, manufacturing procedure in foreign countries is substantially the same as in the United States. The Japanese industry and methods of manufacture are discussed below.

Japan

Slide fasteners have been made in Japan for at least 10 years for both home consumption and export trade, and there are now about 68 producers in and around Osaka, the center of the industry. With the exception of the production of a few concerns, one of which produces about 60 percent of the total output, Japanese fasteners are made by organizations with very limited manufacturing facilities. New concerns are reported to be entering the business.

The usual practice in Japanese manufacturing is to purchase the tape and cord separately, the cording being done by the slide-fastener manufacturer. The interlocking elements, sliders, and stops are formed by machine from brass wire and are then plated, the interlocking elements, in most cases, being placed on the tape by hand methods. Fastener parts are produced in small factories and distributed among home workers for further fabrication and assembly.

About 20 of the principal producers have recently formed the Osaka Slide Fastener Makers Association, which they are attempting to convert into a governmentally approved trade association for the industry, to standardize products, control prices, production, and exports; however, this association had not in May 1936 been approved.

COMPARABILITY

The question of the comparability of the foreign and domestic slide fasteners offered in the American market on a competitive basis involves consideration of the features of construction and the usability of the products being compared.

In regard to features of construction, there appears to be little essential difference in material or in design between the domestic and imported Japanese products.

Although laboratory tests indicate that the tape, which constitutes the foundation of all fasteners, is the weakest component, its lack of strength is not often a cause of complaint from users of any make of fasteners.

In view of the fact that any of the metal components used are stronger than the tape, the metal used has little, if any, influence on comparability. The choice of metals is determined by the process of manufacture used and not by variations in strength. One process of manufacture, which forms and attaches the interlocking elements to the tape in a single operation, uses a nickel silver or a low brass (low in zinc content) to give the desired nickel or gilt finish. Another, a two unit process, which permits plating of the elements before they are attached to the tape, allows the use of a lower-priced high brass (high in zinc content). Fasteners finished by plating the metal parts show less tendency to tarnish than those made by a single unit process and given only a light lacquering for protection. Most American fasteners have interlocking elements formed and attached to the tape in one operation, precluding their being polished and plated; this results in a fastener that operates somewhat less easily and less smoothly than does one made by a process wherein the elements are tumbled and plated before application. All of the Japanese fasteners imported have been made by this two unit process.

As to the usability of slide fasteners, factory inspection is of fundamental importance, because of the risks of losses in workmanship and materials on the part of manufacturers using the fasteners if they are not of uniformly good quality. According to reports from the importers, there were at first many complaints from users of the Japanese fasteners, but they are improving and complaints are now less common. The defect of the Japanese fasteners was not that the individual units were inferior in quality, for the bulk of them were commercially as usable as those of domestic or European origin. The cause of complaint was that some had interlocking elements and stops which became loose or pulled off the tape or had sliders which failed to perform properly, defects which would have been found and corrected if the fastener had been carefully inspected.

The Japanese product has improved materially in recent months, and complaints in regard to it could be minimized by greater care in inspection either at the factory or by the importer or consuming manufacturer. Only a few of the slide fasteners rejected on inspection need be discarded, as only minor adjustments are needed to make most of them usable. One large consumer who makes a practice of inspecting and, if necessary, reworking Japanese fasteners finds that with slight adjustment the product can be made entirely satisfactory for his use.

A study of many samples of fasteners indicates that the gage of metal and the design of foreign and domestic products are substantially the same in most cases and that the faults of the Japanese fasteners result almost wholly from lack of careful inspection and adjustment.

MARKETING

Creating a Demand.

Slide fasteners per se are not useful articles. They have utility only when incorporated into some other product. As a result, the marketing of slide fasteners involved the creation of a demand for this particular type of mechanical closure.

First attempts at promoting the sale of slide fasteners were for their use as closures for clothing, shoes, and leather accessories. These efforts were not at all successful. About the only regular outlets for slide fasteners in 1914, 1915, and 1916 were rather small markets for use in mothproof bags for clothing and coveralls used by workers.

In 1917, after the entry of this country into the World War, a soldier's money belt, with a slide fastener inserted, was developed; this, until the end of the war, took most of the industry's output. During the war various uses for fasteners in military equipment were developed. At the end of the war the money-belt market disappeared, and the industry's market was limited principally to its original use in coveralls and clothes bags and a small peacetime demand in military equipment.

About this time, a man in Gloversville, N. Y., conceived the idea of applying the slide fastener to a tobacco pouch. The product became very popular and for the next few years almost the entire output of fasteners was used in tobacco pouches. Manufacturers of slide fasteners maintain that this is the only application developed outside the industry.

Although salesmen had for many years tried to sell slide fasteners to rubber footwear manufacturers, it was not until 1923 that the "zipper" boot was introduced. The new slide fastener equipped galoshes met with an enthusiastic market response, and from 1923 through 1927, 70 percent of the industry's output went into rubber footwear. This market practically collapsed at the end of 1927. Faced by a need for other outlets, but by this time fortified by more adequate resources and experience, and aided by a consumer familiarity made possible by the zipper boot, the slide fastener industry made a stronger bid for business in industries in which its efforts prior to this time had not been particularly successful. Renewed efforts at promoting a wider use of slide fasteners resulted in a fairly wide adoption on articles such as handbags, children's leggings, and luggage.

In 1931 lumbermen's jackets and wind breakers equipped with slide fasteners became popular. At the same time an increasing market was found in coat sweaters, pull-over sweaters, and polo shirts, and several other markets started to open up among manufacturers of work shirts, corsets, billfolds, and novelties of many sorts.

The industry's development and promotion policy have grown out of two ideas: First, recognition of the importance of a diversified market, and, second, the desire to avoid unsatisfactory experience with slide fasteners in an application which might result in consumer resistance to slide fasteners in all applications. This second need has caused the industry to develop products especially adapted to the requirements of particular manufacturing trades and also to work with the consuming trades in developing proper applications of the fastener in the final product.

Research and Development.

The industry has made large expenditures for developing new machinery and manufacturing techniques. In addition, extensive research has been carried on by the slide fastener industry with the object of improving the product, creating and widening markets, and developing the technique of application to manufactured products. Each time the industry has opened up a new market, peculiar circumstances have developed which have indicated the need for refinement in the slide fastener itself and a specialized technique in applying it to the particular article.

Educational work among manufacturers using slide fasteners in their products is especially important when fasteners receive fairly wide acceptance in an article, because then manufacturers who have had no experience with slide fasteners wish to use them in their lines. Under these circumstances the slide fastener manufacturer must conduct an educational program with the inexperienced consuming manufacturer for two reasons. First, if the finished product with fastener closure is not satisfactory, the maker may place the blame on the fasteners and ask damages from the slide fastener manufacturer, and second, the product with the faulty application may fail to give consumer satisfaction and may cause some customer resistance to slide fastener closures in any kind of article.

Distribution.

Slide fasteners are marketed by direct sale to manufacturers who incorporate them into their particular products requiring closures, and by sales to jobbers, chain stores, mail-order houses, and dry-goods stores for sale to retail consumers for use in home-made articles. About 95 percent of total sales in 1935 were to manufacturers, the remainder being to retail outlets. Most of the original sales are made by personal solicitation, whereas repeat orders are usually handled by mail. The distribution of 1934 and 1935 sales by consuming trades is shown below. These data are based on an analysis made by the Tariff Commission of sales of importers and domestic manufacturers.

Trade	1934	1935	Trade	1934	1935
	Percent	*Percent*		*Percent*	*Percent*
Handbags	18.2	19.2	Work shirts	2.1	3.2
Sweaters	19.8	17.3	Brief cases	3.5	3.0
Jackets	20.3	16.1	Luggage	3.2	2.9
Polo shirts	8.7	9.7	Snow suits and leggings	3.1	2.7
Retail package	4.2	6.9	Corsets	1.1	2.3
Men's trousers	3.4	4.2	Women's dresses	.9	1.5
Billfolds	2.2	3.9	Miscellaneous	4.8	3.9
Rubber footwear	4.5	3.2			

Marketing Centers.

Practically all of the sales by importers and about 60 percent of the sales by domestic manufacturers in 1935 were made in the metropolitan area of New York, the principal market for slide fasteners. Philadelphia and Boston are also large marketing centers and there are important markets in Chicago, Cincinnati, St. Louis, San Francisco, and other large cities.

Conditions of Sale.

Delivery.—On individual shipments of domestic fasteners valued at about $100 or more, transportation charges are usually paid by the fastener manufacturer; however, deliveries in metropolitan New York, Boston, and Philadelphia, regardless of value, are f. o. b. buyers' location. On the smaller shipments outside of the three cities named, sales are f. o. b. domestic slide fastener manufacturers' plant.

Importers deliver c. i. f. New York on direct import, and on sales of goods in warehouse make free delivery in New York City. In 1935 they had not as yet had sufficient business outside New York to develop a comprehensive delivery policy for other markets.

Terms of payment.—Sales by domestic manufacturers are 2 percent 10 days proximo, 30 days net.

Importers sell their goods either on direct import or from stock on hand in the United States. On direct import the buyer is required to open a letter of credit for payment of the goods on the date of shipment from abroad. Sales from stock on hand are made on terms of 1 or 2 percent 10 days, 30 days net.

Rejections and damage claims.—On the price lists of domestic manufacturers appears a guarantee that the company will deliver fasteners free of charge to replace those returned and found to be defective in material or workmanship. Imported fasteners are marketed subject to the same guarantee. This guarantee limits the liability of the vendor of the fastener to the price of the fastener itself and then only if it is established that the failure of the fastener is the result of negligence by the slide fastener manufacturer. This policy has been maintained with considerable rigidity, although commercial experience has caused some exceptions to be made both by domestic manufacturers, particularly the smaller companies, and by importers. It is essential for the slide fastener manufacturer to limit his liability in the event of faulty fasteners because the value of the materials and workmanship in the article into which it is incorporated is in some cases many times the price of the fastener.

Placement of Orders and Delivery.

Some domestic manufacturers make goods only on order and deliver as manufactured; on such orders 5 to 15 days are required for delivery. It is more common, however, especially since the beginning of 1935, for domestic manufacturers to carry stock and to make deliveries in from 24 to 48 hours after receipt of order. To facilitate delivery some domestic manufacturers maintain warehouse stocks at points like Boston, Chicago, Philadelphia, New York, and San Francisco.

A limited variety of sizes, lengths, and colors is carried in importers' New York stocks for immediate delivery. Deliveries from abroad take from 6 to 12 weeks.

Trade Requirements.

As shown in table 4, following, each of the manufacturing industries using slide fasteners has somewhat specialized requirements with respect to type and length of fastener, finish of metal, and color and width of tape. This table is based on information obtained by the Tariff Commission from consuming trades.

The table offers a representative list of each industry's particular demands. All trades require quick deliveries at times, but where "quick delivery" is noted, repeat orders and the great variety of colors used make quick delivery an especially important consideration. Some of the trades listed are highly seasonal and susceptible to quick style changes, others are more able to estimate their requirements over a definite period of time.

TABLE 4.—*Slide fasteners: Some individual trade requirements*

Trade	Type of fastener		Type of slider		Range of lengths	Range of tape colors		Other requirements
	Regular	Separable	Lock	Nonlock		Few	Many	
					Inches			
Jackets		X	X		13–26	X		
Pullover sweaters	X		X		5–12		X	Quick delivery.
Handbags	X			X	5–12		X	Ornamental pulls; quick delivery.
Polo shirts	X		X		5–12	X		Quick delivery.
Retail package	X	X	X	X	4–26	X		
Coat sweaters		X	X		14–23		X	Do.
Trousers	X		X		5½–14	X		Cross tape at bottom.
Work shirts	X		X		9–14	X		
Billfolds	X			X	7–9	X		
Corsets	X	X	X		6½–22	X		Enameled fastener.
Rubber footwear	X		X		3½–10	X		
Women's dresses	X		X	X	6–10		X	Quick delivery.
Snow suits	X		X		10–22	X		
Hand luggage	X			X	12–32	X		Ornamental pulls.

COMPETITIVE CONDITIONS

Competition with Other Closing Devices.

In considering competition in the slide fastener market, attention should first be given to that between fasteners and other closing devices such as buttons, buckles, snap fasteners, hooks and eyes, and laces. In this respect an important consideration is the fact that the slide fastener is new and novel.

Slide fasteners are introduced as "specials." In many trades they are still a novelty although in some lines they have become a standard feature. Their establishment as a standard in any specific line of products depends upon their utility and their cost in relation to the cost of the articles to which they are applied.

As slide fasteners are relatively expensive, articles equipped with them often sell at higher prices than similar products with other types of closures, the difference usually amounting to about the price of the slide fasteners used. In trades where the application of the fastener requires more labor and material than the installation of the other fastening devices the difference is greater. The cost of slide fasteners precludes their use in many low-priced articles, and products with such closures are seldom offered in the same price range as those with other types of closures.

The importance of slide fastener costs to some of the consuming trades is shown below. These data were obtained from manufacturers in the various consuming trades and represent the proportionate cost of slide fasteners at 1936 domestic prices to the manufacturers' factory cost of the article.

Trade	Illustrative wholesale selling price per dozen	Proportion of total cost represented by slide fasteners
		Percent
Rubber footwear	$18.00	12
Pullover sweaters	7.75	15
Handbags	4.00	20
Corsets	16.00	20
Billfolds	4.00	25
Cosmetic cases	4.00	30
Utility bags	7.00	30
Polo shirts	4.00	35
Tobacco pouches	1.50	60

Manufacturers of lines like pullover sweaters, coat sweaters, polo shirts, and work shirts seem to feel that the slide fastener is too large and too inflexible an element of cost to permit its permanent adoption and as a result they are now attempting to style away from slide fasteners. This is accomplished in pullover sweaters by a return to crew-necks and V-necks; in polo shirts there is a trend to buttons or lacing closures; coat-sweater manufacturers are adopting novelty buttons and the work-shirt trade is experimenting with a newly developed metal snap button.

The covered slide fastener, which differs from the conventional type only in having the functional elements covered, must be regarded as a separate competitive factor because of patents affecting both domestic manufacture and imports. When first introduced the covered fastener was unsatisfactory, but it has been improved in the last few years and, according to some commercial users, is now as satisfactory as the conventional type. This fastener is particularly adaptable in applications where it is desirable to conceal the metal elements of the slide fastener. Concealing the metal elements of the conventional slide fastener usually involves making extra pleats in the article with consequent additional costs in both material and workmanship. As only one company made covered slide fasteners prior to 1936, production statistics cannot be given; however, consumption has risen sharply within the last 2 years. A new firm has recently been organized to make covered slide fasteners but is not yet in commercial production.

Prices of Domestic Slide Fasteners.

The industry's larger manufacturers have maintained a "one-price" policy. Some of the smaller concerns have offered price concessions of 5 to 10 percent, but this practice has not been an important factor in the market situation. Prices in recent years are shown in table 5.

In examining the prices in the table it will be noted that the small size sells at a higher price than the medium size and that in the latest price list the 5-, 6-, and 7-inch lengths all sell at the same price. Domestic producers state that this price policy is not based on costs but has been developed from a desire to have the consuming trade use the size and length of fastener best adapted to individual requirements. For example, if the small fastener were lower priced than the medium, they think that some manufacturers might use it when the article required the medium size. Likewise, if the 5-inch were cheaper than the 6- or 7-inch lengths, they feel that some makers of handbags, polo shirts, and pullover sweaters might try to use a 5-inch slide fastener when the 6- or 7-inch length was essential to proper consumer satisfaction.

TABLE 5.—*Slide fasteners: Prices of domestic nonseparable fasteners with standard (nonlocking) sliders, 1932–35*

[Price per fastener]

Length	Small					
	1932	1933		1934		1935
	May	July	October	February	November	December
3 inches or less	$0.120	$0.120	$0.110	$0.095	$0.085	$0.069
4 inches	.130	.130	.120	.105	.093	.077
5 inches	.140	.140	.130	.115	.101	.085
6 inches	.145	.145	.135	.120	.105	.085
7 inches	.145	.145	.135	.120	.105	.085
8 inches	.145	.145	.135	.120	.105	.093
9 inches	.150	.150	.140	.125	.110	.101
10 inches	.160	.160	.150	.134	.119	.109
15 inches	.210	.210	.200	.179	.164	.149
20 inches	.260	.260	.250	.224	.209	.189
25 inches	.310	.310	.300	.269	.254	.229
For each additional inch add	.010	.010	.010	.009	.009	.008
For bead chain pull add	s. q.	s. q.	s. q.	.005	.005	.005
For separating fastener add	n. o.	n. o.	n. o.	n. o.	.045	.045
For pin or cam lock slider add	n. c.	n. c.	n. c.	n. c.	.005	.005
For automatic lock add	n. o.	n. o.	n. o.	.010	.010	.010

n. o.=Not offered. n. c.=No charge. s. q.=Special quotaion.

TABLE 5.—*Slide fasteners: Prices of domestic nonseparable fasteners with standard (nonlocking) sliders, 1932–35*—Continued

Length	Medium					
	1932	1933		1934		1935
	May	July	October	February	November	December
3 inches or less	$0.110	s. q.	s. q.	$0.095	$0.080	$0.064
4 inches	.120	$0.120	$0.120	.105	.088	.072
5 inches	.130	.130	.130	.115	.096	.080
6 inches	.135	.135	.135	.120	.100	.080
7 inches	.135	.135	.135	.120	.100	.080
8 inches	.135	.135	.135	.120	.100	.088
9 inches	.140	.140	.140	.125	.105	.096
10 inches	.150	.150	.150	.134	.114	.104
15 inches	.200	.200	.200	.179	.159	.144
20 inches	.250	.250	.250	.224	.204	.184
25 inches	.300	.300	.300	.269	.249	.224
For each additional inch add	.010	.010	.010	.009	.009	.008
For bead chain pull add	s. q.	s. q.	s. q.	.005	.005	.005
For separating fastener add	.040	.040	.040	.040	.045	.045
For pin or cam lock slider add	n. c.	n. c.	n. c.	n. c.	.005	.005
For automatic lock add	n. o.	.010	.010	.010	.010	.010

n. o.=Not offered. n. c.=No charge. s. q.=Special quotation

Competition from Imports.

Although price is probably the most important factor in competition between domestic and imported slide fasteners, other considerations strongly influence the buyer's choice. These considerations are range and variety, prestige, and service. In the following table prices during 1935 and 1936 of domestic and imported slide fasteners are compared.

TABLE 6.—*Slide fasteners: Comparison of prices of domestic and imported Czechoslovakian and Japanese nonseparable fasteners with standard (nonlocking) sliders*

[Price per fastener]

Length	Small					
	1935			1936		
	Domestic	Czechoslovakia	Japan	Domestic	Czechoslovakia	Japan
3 inches	$0.085	$0.080	$0.030	$0.069	$0.0600	$0.027
5 inches	.101	.080	.050	.085	.0765	.045
6 inches	.105	.095	.054	.085	.0765	.050
7 inches	.105	.095	.063	.085	.0765	.057
8 inches	.105	.095	.070	.093	.0840	.065
9 inches	.110	.100	.080	.101	.0900	.070
10 inches	.119	.108	.090	.109	.0980	.077
15 inches	.164	s. q.	s. q.	.149	.1340	.117
20 inches	.209	s. q.	s. q.	.189	.1700	s. q.
25 inches	.254	s. q.	s. q.	.229	.2060	s. q.
For each additional inch add	.009	s. q.	s. q.	.008	.0072	s. q.
For bead chain pull add	.005	.005	.005	.005	.0050	.005
	Medium					
3 inches	$0.080	$0.067	$0.023	$0.064	$0.0575	$0.022
5 inches	.096	.085	.039	.080	.0720	.037
6 inches	.100	.091	.043	.080	.0720	.042
7 inches	.100	.091	.050	.080	.0720	.047
8 inches	.100	.091	.058	.088	.0790	.053
9 inches	.105	.095	.063	.096	.0850	.058
10 inches	.114	.104	.072	.104	.0940	.064
15 inches	.159	.146	s. q.	.144	.1290	.093
20 inches	.204	.189	s. q.	.184	.1650	s. q.
25 inches	.249	.232	s. q.	.224	.2010	s. q.
For each additional inch add	.009	s. q.	s. q.	.008	.0072	s. q.
For bead chain pull add	.005	.005	.005	.005	.0050	.005

Domestic and Czechoslovakian subject to discount of 2/10, Japanese prices subject to discount of 1/10.
s. q.=Special quotations, not on regular lists.

As shown by table 6, the price of the Czechoslovakian slide fastener was about 10 percent lower than that of the domestic in 1935 and 1936. In this respect it should be noted that the prices of the Czechoslovakian fastener are typical of prices of fasteners from European countries. The prices of the Japanese slide fasteners were lower than the domestic by about 25 to 70 percent in 1935 and by 20 to 65 percent in 1936. In both 1935 and 1936 the differential was greater on the medium-sized fastener than on the small size; both the domestic and the Japanese sellers make a lower price for medium than for small-size fasteners, but the difference is greater for the Japanese product. It will be noted also that especially in 1935, this differential diminished as the lengths of the fastener increased, the Japanese sellers advancing the price with the length to a greater extent than the domestic producers.

Table 7 shows the excess of the domestic prices over the Japanese prices for the various kinds of fasteners of which there are imports, and the ratio of this excess to the respective domestic prices. In considering this table it should be noted that imports of the 6- and 7-inch lengths are most important in both sizes. The small size is imported in lengths less than 6 inches, but lengths over 9 inches are not imported in any considerable quantities. The medium size is not imported in the very short lengths, and there are only a few imports over 10 inches in length.

TABLE 7.—*Slide fasteners: Ratio of Japanese price differentials to domestic prices of nonseparable fasteners with standard (nonlocking) sliders*

[Per fastener]

Length	Small					
	1935			1936		
	Domestic price	Excess of domestic over Japanese price		Domestic price	Excess of domestic over Japanese price	
		Amount	Percentage of domestic price		Amount	Percentage of domestic price
3-inch	$0.085	$0.055	65	$0.069	$0.042	61
5-inch	.101	.051	50	.085	.040	47
6-inch	.105	.051	49	.085	.035	41
7-inch	.105	.042	40	.085	.028	33
8-inch	.105	.035	33	.093	.028	30
9-inch	.110	.030	27	.101	.031	31
10-inch	(1)	(1)	(1)	(1)	(1)	(1)
15-inch	(1)	(1)	(1)	(1)	(1)	(1)
	Medium					
3-inch	(1)	(1)	(1)	(1)	(1)	(1)
5-inch	$0.096	$0.057	59	$0.080	$0.043	54
6-inch	.100	.057	57	.080	.038	48
7-inch	.100	.050	50	.080	.033	41
8-inch	.100	.042	42	.088	.035	40
9-inch	.105	.042	40	.096	.038	40
10-inch	.114	.042	37	.104	.040	38
15-inch	.159	----------	----------	.144	.051	35

[1] Not important.

Range and Variety of Domestic and Imported Fasteners.

With regard to range and variety of slide fasteners offered by importers, several situations warrant special attention. Those parts of the exclusion order that are still effective and domestic patents now in force are the most obvious restrictions on the kinds of fasteners that may be imported. The exclusion order now covers certain types of locking sliders but does not cover the separating fastener. Thus far imported fasteners are offered with only one type of locking slider, that having a wing-prong lock which is rather ineffective. The Bureau of Customs has permitted the entry of a shipment of Swiss fasteners with a distinctive type of pin lock; however, it is a question of the future whether any pin lock can be imported without infringement of domestic patents and also whether certain types of automatic locks now offered by European makers can be imported without violation of domestic patents.

Although separating fasteners are not now covered as such by the exclusion order, they cannot in fact be imported commercially as long as importation of locking sliders is prohibited, since separating fasteners in practically all uses must be equipped with locking sliders.

In addition to the strictly legal aspects which restrict importers in bringing in a broader range and variety of slide fasteners, there is the commercial consideration that foreign fasteners are made by manufacturers whose production is established upon the basic requirements of markets other than the United States. It may not be commercially feasible, until the importers secure a much larger portion of the American market than they now have, for the foreign manufacturers to make all of the items which are now a part of the standard domestic line.

Although it is possible that there may be considerable interchangeability of small- and medium-size fasteners, narrow and wide tapes, black and white, and the like, as indicated earlier, the various trades have rather specialized requirements with regard to the makeup of their typical fasteners. For example, a closed-end fastener cannot, in general, be substituted for a separating fastener, nor can a fastener with a tape of one color commonly be substituted for a fastener having a tape of another color. The limitation on range and variety is a definite competitive consideration because when a firm sells on sample, deliveries must conform to specifications, and in using a variety of fasteners the inconvenience of dealing with several suppliers may be more costly than the individual price savings.

In the following table a comparison of the range and variety of domestic and imported slide fasteners offered in the American market in 1935 and in the first quarter of 1936 is shown.

TABLE 8.—*Slide fasteners: Comparison of range and variety of domestic and imported lines offered in the American market in 1935 and in the first quarter of 1936*

Item	Domestic		Japanese and European	
	Regular order	Special order	Regular order	Special order
Type of fastener	Closed and open bottom.		Closed bottom.	
Type of slider	Nonlock; pin lock; cam lock; automatic lock; cam-type pin lock.		Nonlock; wing-prong lock.[1]	
Type of pull (of the types indicated, domestic manufacturers supply a greater variety than the importers).	Metal tab; chain; ornamental.	Extensive varieties.	Metal tab; chain.	Developing greater variety.
Metal finish	Nickel, gilt, aluminum oxidized, colored (enameled).		Nickel; gilt	
Tape:				
Materials	Cotton; rayon.	Any kind	Cotton	Developing greater variety.
Widths (inch)	5/16, 7/16, 9/16, 5/8, 3/4, 7/8.	Any width	7/16, 9/16	
Colors	About 40	Any color	About 5	
Length (inches)	3 to 24	Any length	3 to 15	Any length.
Size	Midget, small, medium, large, extra large.		Small, medium.	

[1] The wing prong lock is imported only from Japan. Customs has cleared one shipment of Swiss fasteners with a distinctive type of pin lock.

Prestige and Related Factors.

Although tests disclose no fundamental differences, the various slide fasteners have different reputations with the trades. Among buyers there is wide diversity of opinion. Some say that all fasteners are satisfactory, others that only a particular domestic brand is good, and still others that the European are the best. In ordering, commercial buyers frequently specify a brand by name, or specify domestic fasteners but not always a particular make. It is a fairly widespread opinion, however, as mentioned in the section on comparability, that the Japanese fasteners as a whole lack the dependability of the domestic and European products which results from careful factory inspection, that while one shipment of Japanese fasteners will be uniformly good, another will contain a number of defective fasteners.

A good illustration is the experience of some of the utility bag makers. The domestic slide fastener is an important element of manufacturers' cost in the dollar line of utility bags. This is a highly competitive trade and manufacturers are extremely interested in effecting the substantial saving in cost which they could obtain by using the Japanese fastener. A lower price fastener would permit them to make up a lower price line of bags which they feel would give them a much larger market. However, manufacturers interviewed were not using Japanese fasteners because the process of making a utility bag is such that if the fastener is defective in the finished article practically the whole cost of the bag is lost. Bags with Japanese fasteners had been made up and although most of them were satisfactory, just enough were unsatisfactory to cause manufacturers to refrain from taking the risks involved.

There is a rather widely held opinion in the trade using Japanese fasteners that, if put into use in the same condition as imported, about one in a dozen is unsatisfactory. This rate of rejection is declining. In contrast to this high rate of rejection is the experience of the rubber shoe and corset trade with failures of domestic fasteners. Rubber shoes and corsets are probably as exacting applications as are made with slide fasteners. Important producers in these trades reported defective fasteners of less than three-fourths of 1 percent. In trades like handbags, billfolds, and sweaters, where the fastener is not subjected to strenuous use, trades reported that domestic fastener failures were too infrequent to be important.

A common commercial test of slide fasteners is that of doubling the fastener and applying pressure to see if it will break open. The Japanese fastener does not stand this test as well as the domestic. Although some buyers are influenced by this test, it is not a measure of efficiency, because a fastener could not operate in a doubled over position and articles are not made with the fastener applied in this way. As a matter of fact the yielding of a particular fastener to such pressure indicates only somewhat greater clearance between the meshed elements, and this clearance contributes materially to the ease and smoothness of operation.

In addition to the matter of physical efficiency, quality involves a question of appearance, i. e., whether the particular fastener adds to or detracts from the appearance of the finished product. Some of the imported Japanese fasteners are about the same in appearance as the domestic and the European, but it is claimed that more of the Japanese are unattractive than of either the domestic or European.

Delivery.

Although it is possible for some trades to make fairly accurate estimates of their future requirements, trades subject to important repeat and fill-in orders are not able to estimate their requirements accurately. As a result prompt delivery is an important consideration in supplying fasteners to some trades. As shown earlier, the domestic industry is able to deliver a very large variety of fasteners in principal markets in from 24 to 48 hours. More specialized orders require a week or so for delivery. Importers, on the other hand, can give prompt delivery on only a limited variety of fasteners and require at least 6 weeks and usually a longer time on special orders. Furthermore, because of the proximity of the domestic manufacturing plants, the domestic industry is in a position to work out specialized problems with respect to individual trade requirements, whereas the importer, being far from his sources of supply, is at a disadvantage in meeting the exact requirements of special orders.

General Situation.

In general, competition between domestic and imported slide fasteners occurs in lower-priced lines and in merchandise where the slide fastener represents a substantial element of manufacturers' cost. Most consuming trades are of the opinion that the European fasteners are as dependable as the domestic. The fact that the price differential on the Czechoslovakian fastener is only 10 percent, however, leads many users to choose the domestic product because they feel that its prestige and established reputation is worth the additional cost. The price differential in favor of the Japanese slide fastener is from 20 to 70 percent. Although this is an attractive manufacturing saving, many manufacturers, even in highly competitive lines, are cautious about adopting the Japanese fastener.

The domestic industry has the advantages of a knowledge of the market, a well-established reputation, a better inspected product, patent protection on lock sliders and separating fasteners, the diversity of product which large production and proximity to the market make possible, and a definite advantage in promptness of delivery as a result of location and experience.

The excess of domestic prices over import prices is especially significant in the use of slide fasteners in articles retailing for $2 each or less. The short-length, nonseparable fasteners not equipped with lock sliders or fancy pulls, used in medium and low priced lines, account for about 15 percent of domestic sales. Import competition is rapidly driving the domestic nonseparable, nonlock fasteners out of this part of the market. Price is secondary to other considerations in supplying the rest of the trade, and import competition is not a primary factor. Especially noteworthy is the fact that imports are not sold exclusively to markets formerly supplied by domestic manufacturers, but their low price has made possible the development of new lower priced lines, which has expanded the use of the fasteners. A considerable portion of the imports have been used in these new lines.

IMPORTS OF ARTICLES CONTAINING SLIDE FASTENERS

Many articles, such as tobacco pouches, handbags, pencil cases, and clothing of various kinds, equipped with slide fasteners are imported. When the slide fastener is a part of an article it is not separately dutiable, but the entire article is taxed at the tariff rate determined by its use or its material. These articles are dutiable under different tariff classifications at widely varying rates of duty. For example, knit polo shirts, in chief value of cotton, are dutiable at 45 percent; pencil cases, in chief value of cotton, at 40 percent; and smokers' articles at 60 percent.

The import trade in low priced lines of these kinds, especially tobacco pouches, pencil cases, children's purses, and billfolds, is expanding at the present time. There is a possibility of importation of numerous other items, especially cosmetic cases, utility bags, handbags, and cheap luggage. If the rate of duty on the finished article is materially lower than the rate of duty on slide fasteners, there is an incentive to import the article rather than the fastener. This is particularly true where the slide fastener is one of the principal elements in the cost of the article in which it is incorporated.

COSTS OF PRODUCTION

Scope of Cost Inquiry.

Cost data were obtained from five domestic producers, three importers of Japanese fasteners, and two of Czechoslovakian fasteners. Inasmuch as Japan is the chief competing country, the costs of Czechoslovakian fasteners are not used in the cost comparisons.

Cost data for four of the five domestic companies have been tabulated, in the aggregate accounting for about 95 percent of the total domestic production; the records of the other domestic company, which was small, were not representative and were not included in the final results. The three importers of Japanese fasteners account for about 80 percent of the total imports from that country; the costs obtained from these three companies are considered representative of the costs of Japanese fasteners. Records of the other importers were not in sufficient detail to permit the development of costs of specific samples.

As shown in table 2, under the discussion of imports, the imports of fasteners from Japan did not reach appreciable volume until the latter half of 1935, consequently both the domestic and foreign costs have been established for the 6-month period July to December 1935.

The domestic production of fasteners covers many varieties, sizes, and lengths, of separable and nonseparable types, equipped with several kinds of sliders operated by a variety of pulls, most of them having some form of locking device. The fasteners imported from Japan are practically confined to a single type—nonseparable fasteners—equipped with nonlocking sliders, principally with plain tab pull, in two sizes (small and medium) and in a restricted range of lengths. Cost comparisons have been confined to the types and kinds of fasteners imported from Japan.

Specifications and Relative Importance of Samples.

The specifications of slide fasteners that were like or similar for the purposes of this investigation are as follows: Small and medium sizes, nonseparable type with nonlocking slider equipped with plain tab pull. The metal is generally of brass and the tape of cotton.

Table 9 shows for the nonseparable, nonlocking type of slide fasteners, of small and medium sizes, the domestic production and imports from Japan combined, segregated as to size and length. The distribution of imports by sizes and lengths is substantially accurate, having been compiled from consular invoices covering about 80 percent of the fasteners imported from Japan. The segregation of domestic production according to size was ascertained from company records, but the segregation according to lengths is partly estimated, records of the companies respecting lengths produced being incomplete; any inaccuracies which exist, however, are reduced to a minimum by the method of group weighting used.

Table 9 shows that small-size fasteners constitute 66 percent and medium-size fasteners constitute 34 percent of the total. Among small-size fasteners, those of the 6-, 7-, and 8-inch lengths comprise 78.4 percent. The remainder is divided between shorter and longer lengths, but cost comparisons are not possible on lengths over 9 inches because of the negligibilty of imports; consequently, 6- and 8-inch fasteners are chosen as the principle samples in the small size and the 4-inch small fastener as a sample of less importance.

Among medium-sized fasteners, those of 6-, 7-, and 8-inch lengths constitute 47.5 percent; the bulk of the remainder is of longer fasteners. Inasmuch as cost comparisons are not possible on medium-sized fasteners longer than 12 inches because of the negligibility of imports, the 12-inch fastener is established as representative of the longer lengths. The 6- and 8-inch medium-sized fasteners are established as representative of the bulk of domestic consumption in this size.

TABLE 9.—*Domestic production and imports from Japan, combined, of nonseparable, nonlocking slide fasteners (of all types of pull), segregated by size and length, for the period July to December, inclusive, 1935*

Length, inches [1]	Small			Medium		
	Number	Ratio to total	Relative weights assigned to samples used in cost comparison [2]	Number	Ratio to total	Relative weights assigned to samples used in cost comparison [3]
		Percent	*Percent*		*Percent*	*Percent*
2	17,786	0.1		267,843	4.0	
3	190,272	1.5		11,353	.2	
4	519,887	4.1	8.7	374,796	5.6	
5	753,202	6.0		295,396	4.4	
6	2,473,392	19.4	38.7	1,072,685	16.2	38.9
7	4,142,391	32.5		1,129,568	17.0	
8	3,367,279	26.5	52.6	942,437	14.3	29.1
9	613,680	4.8		313,944	4.7	
10	405,344	3.2		213,197	3.2	
11	101,343	1.9		71,189	1.1	
12	44,146			498,276	7.5	32.0
13	21,112			306,110	4.6	
14	23,395			191,091	2.9	
15	7,552			130,365	2.0	
16	328			93,990	1.4	
17	288			48,150	.7	
18	3,571			100,233	1.5	
Over 18	41,100			580,492	8.7	
Total	12,726,068	100.0	100.0	6,641,115	100.0	100.0
Percentage of total	66			34		

[1] Including additional fractional parts of an inch.

[2] For the determination of relative weights the procedure is as follows: The weight assigned to the 4-inch small fastener is the percentage of small fasteners 4 inches and less in length, plus half of the percentage of 5-inch fasteners; the weight assigned to the 6-inch fastener is the percentage of 6-inch fasteners, plus half the percentages of 5-inch and 7-inch fasteners; the 8-inch fastener carries the rest of the weight.

[3] These three fasteners are assigned group weights by a method indentical with that idicated for the small fasteners.

Consolidating the two sets of weights (described above) into one series the results are as follows for the six samples:

Sample	Relative weight as representative of—		
	Small fasteners	Medium fasteners	Small and medium fasteners
4 inches small	9		6
6 inches small	39		26
8 inches small	52		35
6 inches medium		39	13
8 inches medium		29	9
12 inches medium		32	11
	100	100	100

Method of Ascertaining Domestic Costs.

Domestic costs were compiled in terms of material, labor, factory overhead, general and administrative expense, imputed interest on investment, and delivery costs to the principal market. The compilation of these costs consisted largely of recording the various elements of material and labor that make up the prime costs of each essential part of a slide fastener. Where such data were not available, materials were weighed and time studies made under the supervision of the Commission's accountants. The nature of these details will be evident from the following comments on the parts that go to make up a completed fastener, their production, assembly, and inspection. The companies did not have cost systems fully indicating the costs of fasteners of particular types, sizes, and lengths, and to the extent that they compiled specific costs did so in averages or by means of predetermination of unit costs assumed to be standard.

As previously described, a slide fastener consists of three groups of parts: (1) The so-called chain, composed of two strips of tape (one edge of each strip being corded to afford anchorage for the interlocking elements and to give greater strength) and the interlocking elements; (2) the slider consisting of body, tab, and sometimes bail; and (3) the stops which, as their name implies, are small parts at both ends of the fastener to prevent the slider becoming separated from the chain.

The making of the chains involves two major operations, the forming of the interlocking elements and the attaching of these elements to the tape. The elements are either cut from preformed metal wire or stamped from flat metal strip. Some are tumbled and plated. They are attached to the tape by automatic machinery especially designed for the purpose. The tape must be corded if not so purchased. In the determination of material costs allowance must be made for the value of metal scrap. The labor of making chains was not paid for at piece rates per fastener and detailed calculations were necessary to establish the labor cost for each sample. In some cases factory overhead is applied departmentally, in which case there is a separate charge for overhead in the chain department.

The slider parts are fabricated by a series of stamping and forming operations or a coining process and must be finished to close tolerances. The assembly of the slider parts and the application of the slider to the chain are operations that require careful workmanship and constant tests to assure the proper operation of the finished fastener. Sliders are parts that have been covered by many patents and vary in method of construction and appearance among the firms visited. In the fabrication of this part, piecework wages are quite prevalent. The cost of a slider is affected by the size and type but not by the length of the fastener.

Stops are of simple construction, being stamped from strip metal. A nonseparable fastener has two stops at one end of the fastener (one at the end of each strip) and one on the other end attaching the two strips. These parts are attached to the fastener after the slider has been put on and found to work smoothly.

The assembling of fasteners is essentially a hand operation and is therefore one of the larger elements of cost.

Frequent inspections are made in the process of manufacture and assembly; as fasteners which do not come up to specification are rejected no seconds are offered for sale.

It was necessary, in some instances, for the Commission's accountants to obtain time studies of certain operations and to weigh materials to determine prime costs. When this was done, adjustments were made to reflect normal productive capacity and credit for recoverable scrap and for uncontrollable factory loss.

Factory overhead was applied, when possible, on a departmental basis, otherwise this item was charged to cost in ratio to direct labor.

Factory overhead in this industry is of the same general composition as that occurring in the manufacture of other small metal wares, but contains a higher charge for tool room and experimental operation than does the manufacture of less precise products. The stamping of the interlocking elements, slider parts, and stops requires precision dies that have to be kept in almost perfect condition because of the close tolerances maintained. Changes in construction are often made in the development of a new sales outlet.

Packing and shipping costs were determined from available data.

The portion of general and administrative expense chargeable to manufacture was applied in ratio to factory cost. This expense consists largely of executives' salaries, office and legal expense, and in some cases experimental expense.

Interest was imputed on the investment in fixed assets and inventories and applied in ratio to manufacturing costs (i. e., factory costs plus general and administrative expense). To the costs thus obtained delivery charges to the principal market were added.

Selling expense, including that portion of general and administrative expense chargeable to selling, was not included in the cost of production.

Weighting of Domestic Costs.

The costs of the individual domestic companies were weighted by the relation that each company's production of nonseparable nonlock fasteners by sizes in quantity bore to the combined total of such production for the four companies whose costs were included in the final result.

Because one firm accounts for much the larger part of the total domestic output, figures showing the average domestic cost cannot be published without disclosing confidential information.

As an illustration of the composition of the average cost of domestic fasteners there are shown below the elements of the cost of 6-inch small and 8-inch medium fasteners expressed in percentages of the total cost.

Element of cost	Percent of total		Element of cost	Percent of total	
	6-inch small	8-inch medium		6-inch small	8-inch medium
Material	33	43	Imputed interest	2	2
Labor	24	21	Transportation	1	1
Factory overhead	27	23			
General and administrative expense	13	10		100	100

Method of Ascertaining Costs of Fasteners from Japan.

Data on the costs of imported slide fasteners (i. e., foreign invoice values plus transportation and other delivery charges) were obtained principally from consular invoices. About 17 importers entered slide fasteners from Japan in the last half of 1935. Three importers accounted for about 80 percent of the total and the costs of their imports were considered representative of all imports of slide fasteners from Japan during the period. Certain elements of landed costs of imported goods are not available from consular invoices. These items were determined from the records of the importers.

Conversions from Japanese to United States currency were made at the rate of exchange obtaining at the time of shipment.

Weighting of Japanese Costs.

The costs of the individual importers were weighted by the relation that each importer's entries (all of which were nonseparable, nonlock fasteners) by quantity bore to the combined total for the three importers whose data were considered representative of all imports from Japan.

There are shown below the elements of the average cost of the 6-inch small and the 8-inch medium Japanese fasteners expressed in percentages of the total costs.

Element of cost	Percent of total	
	6-inch small	8-inch medium
Foreign value	78	78
Foreign charges [1]	6	6
Ocean freight and marine insurance	2	2
Cotton and copper tax [2]	4	3
Domestic charges [3]	10	11
	100	100

[1] Foreign charges include foreign inland freight, buying commission, go-down rent and fire insurance, lighterage, consular fee, bill brokerage, and stamps.

[2] The cotton tax is compensatory for a similar tax included in domestic material cost.

[3] Domestic charges include custom broker's entry fee, cartage, buyers' salaries and traveling expenses cable expenses, etc.

Comparison of Costs.

Because of the importance of one firm in the domestic industry, monetary costs or cost differences cannot be shown without disclosing confidential information. The cost difference having been established on each of the fasteners selected as samples, these differences were related to the dutiable value of the respective samples to establish the indicated rate of duty on each sample. Each of these indicated rates of duty was then assigned a weight proportionate to the importance of the sample in relation to the total of the domestic production and the imports from Japan combined; by this method a weighted average cost difference of 66 percent of dutiable value was established. The costs compared with those of nonseparable, nonlock fasteners, the only type imported from Japan in appreciable quantities during the cost period; this type was considered representative of all fasteners and parts thereof in chief value of base metal.

APPENDIXES

APPENDIX I

INVESTIGATION UNDER SECTION 337 OF THE TARIFF ACT OF 1930

On August 9, 1932, pursuant to a complaint by the Hookless Fastener Co., the Tariff Commission instituted an investigation under section 337 of the Tariff Act of 1930 of alleged unfair methods of competition and unfair acts in the importation and sale of slide fasteners. The complaint alleged principally violation of patent rights by importers, underselling on the part of importers, and palming off of imported fasteners as domestic fasteners. On August 30, 1932, pursuant to a request of the President, the Secretary of the Treasury directed customs officers to exclude from entry, except under bond, certain slide fasteners. After investigation, the Tariff Commission found that certain slide fasteners had been imported in violation of complainant's patent rights, and also that certain imported fasteners had been improperly marked with a United States patent number. The Court of Customs and Patent Appeals affirmed the Commission's findings, and the President directed the exclusion from entry of slide fasteners found to have been unfairly imported. The exclusion order may be subdivided roughly as follows:[1]

1. Subdivisions (a) to (k) of the order covered broadly most of the familiar types of slide fasteners in which the interlocking elements on the opposing stringers are of identical construction, with a projection on one side of the element and a corresponding recess on the opposite side. These subdivisions also covered various details not sufficiently important to enumerate here. Two so-called pioneer patents formed the basis of these subdivisions, both of them expiring in 1934, the second on October 15. The subdivisions of the order terminated with the expiration of the patents, thereby permitting the importation of slide fasteners which utilized the original invention.

2. Subdivisions (l) to (p) cover slide fasteners containing various types of improved sliders under five different patents. In order, these sliders were the "yoke" slider, the "wing lock or pin lock" slider, the "rivet" slider, the "cam lock" slider, and the "coined" slider. Most of the claims in the patent covering the rivet slider were held invalid, and the President in November 1934 rescinded the section of the order relating to fasteners containing such sliders. Accordingly, it is now lawful to import slide fasteners containing rivet sliders, provided that they do not also contain wing lock or pin lock or cam lock features. The section of the order dealing with yoke sliders expired in May 1936. The sections dealing with the wing lock or pin lock, the cam lock, and the coined sliders are scheduled to expire in 1941, 1943, and 1945, respectively.

3. Subdivision (q) deals with a special type of fastener in which the interlocking elements instead of containing the usual projection

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[1] This detailing of types of slide fasteners is not a categorical definition of the scope of the exclusion order, but is rather a general statement as to types.

and recess are made in the shape of a forked hook which fastens over the narrow rounded neck of the opposite forked hook. The elements on the opposing stringers are the same. This section of the order is scheduled to expire in 1946.

4. Certain fasteners which had been improperly marked with a United States patent number the Commission found had led persons to believe that the fasteners were made under such patent when actually the fasteners were not of the construction found in the patent.

Because the original order of investigation and temporary exclusion order were limited to slide fasteners and certain importers undertook to evade the order by importing the slide fasteners as parts and assembling them in the United States, the Commission conducted a supplemental investigation covering the parts and recommended to the President the exclusion from entry of such parts.

The exclusion order covers the slide fasteners described therein whether imported separately or as parts of other articles, but the present investigation applies only to slide fasteners and parts imported as such.

APPENDIX II

DETAILED DESCRIPTION OF SLIDE FASTENER PARTS AND OPERATION

The following description pertains to the types of slide fasteners most commonly used. The interlocking elements are more or less oblong in shape, one end being slotted to form a pair of clamping jaws for attaching to the corded edge of the tape and the other end being cup-shaped. The elements are mounted on the tapes and with spaces between them slightly more than the thickness of the elements at the jaw end. The two tapes of a completed fastener are placed opposite each other in such a way that the elements are staggered, i. e., those on one tape are opposite the spaces between the elements on the other. The metal interlocking elements are made in several sizes—midget, small, medium, large, and extra large—and sliders are made in sizes corresponding to the element size range.

The slider, the action of which meshes and unmeshes the interlocking elements, is "Y shaped" in design. The single channel at the bottom is just wide enough to permit the passage of the joined interlocking elements and each of the channels at the top is just wide enough to permit the passage of one of the separated series of elements.

The slider, as it is moved up and down the tape, operates by bending the tapes sharply apart over short arcs so that the elements are separated in a spoke-wise manner sufficiently to permit the cup-shaped ends to mesh or unmesh one at a time. After the elements are meshed, the fact that the cup-shaped ends are thicker than the spaces between the opposing elements with which they are engaged, keeps the fastener from opening.

The range of movement of the slider is confined to that portion of the tape upon which the rows of interlocking elements are mounted by means of stops. Stops are small pieces of metal which, in the case of bottom stops, hold the lower ends of the two tapes together, and in the case of top stops, merely prevent the slider from going beyond the limit of the elements.

Attached to the slider is a small pull which serves principally as a convenient finger hold for operating the fastener. A large variety of metal tabs, chains, and ornamental pulls are used.

There are four principal kinds of slider construction. In this discussion the pull is regarded as distinct from the slider and is not regarded as a part. These are known as the yoke, rivet, coined, and die-cast sliders; all have the same general Y shape, perform identical functions, and in each case are equipped with similar pulls. Yoke sliders, although not widely used today, were the first type developed. Probably the most important development in slide fastener construction is the evolution from a three-piece yoke slider to a two-piece rivet slider and finally the one-piece coined or die-cast slider.

Yoke sliders usually consist of three parts. One part forms the top and bottom of the slider, over which extends a yoke, the second part, which prevents spreading and serves as an anchorage for the pull. These two parts are generally held together by a third part; however, in some cases this joining is effected by solder. The rivet slider is made of two parts. The top and bottom of the slider are much the same as in the yoke type but are stiffened by a rivet to which the pull is attached. Coined sliders are produced by subjecting a strip of metal to such intense pressure between dies that the metal flows, forming exact blanks which require only trimming and bending to make a complete slider. The die-cast slider is made by forcing molten metal into a die.

The rivet and coined sliders constitute the bulk of domestic output, the coined slider being the more important. The yoke slider is not produced to any great extent and the die-cast slider is still more or less in an experimental stage.

Aside from the methods of construction of sliders, there are two distinct types. One is a locking type, which prohibits the fasteners from self-opening and with which the length of the opening can be regulated, while the other is nonlocking. In each case these sliders are of numerous designs.

of sliders

Probably the most common of the locking types is the pin or wing lock slider, in which a small pin projects through the slider body into the spaces between the interlocking elements, thereby holding the slider at any desired point. This type is operated by pressing down the tab pull, of which the pin is an integral part. This manual operation is dispensed with in the automatic lock slider, which has a spring acting upon the pin element. The pull tab is attached to the slider in a manner which permits the lifting of the pin and thus the freeing of the interlocking elements when the tab is pulled upward.

In the cam lock type of slider the pull tab has a small projection at the base, shaped so that when the tab is pressed down pressure is exerted on the slider body. This operates in two ways—the cam may merely act upon a portion of the slider body, depressing it against the elements, or the slider body may be perforated and that part of the body which is made flexible by the perforation is pressed against the elements, effecting a lock.

Other locking sliders which are less generally used include the cam type pin lock which combines the features of both the cam and pin locks so that the same slider has a double locking action, and the wing prong lock with a metal projection in the upper channels of the slider body which engages the interlocking elements when a sidewise pressure is exerted on the tape.

While the essential operating features of one fastener are similar to those of another, there are four general types in use. One type, the plastic fastener with functional parts made of pyroxylin, not being a manufacture of metal, is outside the scope of this investigation. Two other types, the covered fastener with metallic interlocking elements covered by the tape upon which they are mounted, and the fastener whose interlocking elements are formed by weaving a coiled wire spring along the edges of the tape, would be dutiable under paragraph 397, however, no foreign made fasteners of these types have been found among the imports. The remaining type, having exposed individual interlocking elements of metal, constitutes by far the bulk of the slide fasteners in use. These fasteners are made in two general types, differing only in the method of joining the two strips of tape at the lower ends. In the nonseparable (closed bottom) fastener, these ends are permanently joined together while in the second type, the separable (open bottom) fastener, the two tapes may be separated throughout their entire lengths.

In each case they may be made in three principal sizes, each size in many lengths, and mounted upon several weights and widths of tape of many colors. The principal metals used are nickel silver, brass, aluminum or zinc alloys. These are finished in two principal colors, gilt or nickel, either by plating or by the natural color of the metals. In addition, they are sometimes enameled in various colors, or are oxidized. These variations, together with the numerous types of sliders, make possible the production of a great variety of finished fasteners.

APPENDIX III

DETAILED DESCRIPTION OF METHODS OF MANUFACTURE

Tape is purchased in continuous lengths from webbing manufacturers and is corded on one edge to afford a better base for affixing the interlocking elements. The corded tape is run into what is known as a chain machine where the interlocking elements are applied. The chain emerges from the machine in continuous lengths, in most cases the interlocking elements being placed only in the desired completed fastener lengths, with gaps of tape between the last element of what will be one fastener and the first of the next.

The chains are produced by two basic methods. One method employs a chain machine which forms the interlocking elements and applies them to the tape in one operation, while in the other method the interlocking elements are completely formed and later fed into the chain machine as individual parts. The essential difference in the finished fasteners made by these methods is in the finish. In the latter process the interlocking elements may be tumbled or more highly polished than when made by the one-unit method and in addition are frequently plated, whereas when they are formed and attached to the tape in one operation the metal used is of a gilt or nickel color throughout and, in general, no finishing or smoothing is done beyond a rolling of the chain through a set of small rolls.

Within the one-unit process, where the elements are formed in the chain machine, there are two distinct methods. One embodies the use of a preformed wire, drawn through a die the shape of the element. This wire is run in the chain machine which "slices" the elements from it. In the second method, the chain machine stamps the elements from flat wire. In the first method, there is only a very small metal scrap loss, which occurs when the wire is drawn through the dies, while in the second method there is a scrap loss of approximately 40 percent.

A recent development in the two-unit process is a chain machine into which two tapes are fed and which places one element on each of the tapes simultaneously. This is not yet in commercial use.

The general practice in producing sliders is to make them from flat wire. In manufacturing these parts numerous operations are necessary, and two basic methods are used. In some cases the sliders are carried through the necessary operations as individual pieces, while in others they are coined in a continuous strip, being sheared subsequent to the forming operations. In both methods the stages of processing are generally similar, but the latter method utilizes automatic machinery, whereas when the slider body is produced in individual parts small power or foot presses are used in most instances. Newly perfected slider machines, equipped with multiple dies, perform in one operation the equivalent of the work of several individually operated small presses. These new machines are now in regular operation and have drastically reduced labor costs in the production of sliders. After the forming operations, sliders are tumbled, double bent, the degree of bend set, the pull attached, and the completed product plated or burnished. The principal difference between the finished sliders is the method of attaching the pull. The coining process allows the pull to be attached directly to the slider body, whereas the other process utilizes an additional part, riveted and rigidly connected to the slider body, to which the pull is attached. The latter is a somewhat less compact appearing product than one which is coined.

The tab pulls and top and bottom stops are each formed from strips of flat wire in a single machine operation and later tumbled. The pulls are attached to the slider and the top and bottom stops applied to the tape by semiautomatic machines or small foot presses. Chain pulls are usually purchased.

It is common practice to launder the chains, after which they are cut to length and the fastener assembled. In some instances the metal components of a fastener are oxidized to render them black or brown, or they may be colored with enamel. In cases where the original metal color is to be retained, the fasteners are frequently sprayed with a clear lacquer to prevent tarnishing.

Although mechanical equipment is employed in practically every operation in producing slide fastener parts, no method is a continuous machine process and considerable labor is required. Assembly and inspection are almost entirely manual operations.

The degree of inspection given the completed fasteners and parts varies with the several manufacturers. It is frequently possible to rework the major portion of unsatisfactory fasteners by replacing a metal part or cutting the longer chains into shorter lengths to remove an imperfect interlocking element.

APPENDIX IV

INCREASING RATE OF DUTY ON SLIDE FASTENERS

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

WHEREAS pursuant to section 336 of Title III, Part II, of the Tariff Act of 1930 (46 Stat. 590, 701), the United States Tariff Commission has investigated the differences in costs of production of, and all other facts and conditions enumerated in said section with respect to, slide fasteners and parts thereof, being wholly or in part the growth or product of the United States and of and with respect to like or similar articles wholly or in part the growth or product of the principal competing country; and

WHEREAS in the course of said investigation a hearing was held, of which reasonable public notice was given and at which parties interested were given reasonable opportunity to be present, to produce evidence, and to be heard; and

WHEREAS the Commission has reported to the President the results of said investigation and its findings with respect to such differences in costs of production; and

WHEREAS the Commission has found it shown by the said investigation that the principal competing country is Japan, and that the duty expressly fixed by statute does not equalize the difference in the costs of production of the domestic articles and the like or similar foreign articles when produced in said principal competing country, and has specified in its report the increase in the rate of duty expressly fixed by statute found by the Commission to be shown by the said investigation to be necessary to equalize such difference; and

WHEREAS in the judgment of the President such rate of duty is shown by the said investigation of the Tariff Commission to be necessary to equalize such difference in costs of production:

NOW, THEREFORE, I, FRANKLIN D. ROOSEVELT, President of the United States of America, under and by virtue of the authority vested in me by section 336 (c), Title III, Part II of the said Act do hereby approve and proclaim an increase in the rate of duty expressly fixed in Paragraph 397 of Title I of the said Act on slide fasteners and parts thereof, wholly or in chief value of copper, brass, nickel, zinc, or other base metal, but not plated with platinum, gold, or silver, or colored with gold lacquer, and not specially provided for, from 45 per centum ad valorem to 66 per centum ad valorem, the rate found to be shown by the said investigation to be necessary to equalize such difference in costs of production.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States of America to be affixed.

DONE at the City of Washington this first day of July, in the year of our Lord nineteen hundred and thirty-six, and of the Independence of the United States of America, the one hundred and sixtieth.

[SEAL] FRANKLIN D. ROOSEVELT.

By the President:
WILLIAM PHILLIPS
Acting Secretary of State.

[No. 2181]

[Printed in Federal Register of July 3, 1936]

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U. S. Tariff Comm.

Report to the President on Cost of
Production of Slide Fasteners, etc

James Stevens
186 Edgemont Pl. Teaneck
N.J.

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